

## New Records of Pteridophytes from Bolivia and Brazil

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ABSTRACT.—Based on herbarium specimens and recent collections made in the last few years, we have found 19 species that are for the first time recorded for Bolivia (9 species) and/or Brazil (12 species). Full specimen citations, comments about previously known distributions, and taxonomic notes are presented for all species. In Bolivia, all new records are for species of *Adiantum*, mostly from lowland regions in northern and eastern Bolivia. In Brazil, most of the new records are for Amazonian Brazil, near the boundaries with neighboring countries. One record is for southern Bahia, showing a clear disjunction between Venezuelan-Guayanan Shield and the Serra do Mar Mountains in northeastern Brazil.

Despite its age, Martius's *Flora Brasiliensis* still remains the most complete reference about the Brazilian flora. Its treatment of pteridophytes by Baker (1870) still represents the most important compilation of Brazilian ferns. However, based on recent nomenclatural changes and several floristic projects, nowadays it is impossible to use only this flora to estimate the diversity of pteridophytes in Brazil. Other literature about Brazilian ferns exists, but it is scattered in monographs of specific families, genera, or groups of species, and often present only a regional diversity of the group. Based mainly on these literature and herbarium data, Prado (1998) estimated 1,200–1,300 species of ferns and lycophytes for Brazil; however, new data suggest even more.

While preparing several local and regional floras in Brazil, as well as some world-wide monographic studies, we found new records of ferns that deserve special mention. Many of the species are well known from neighboring countries (e.g., Venezuela, Guianas, Colombia, Ecuador, and Peru), and their occurrence in boundary regions might be expected. For example, the Venezuelan-Guayanan Shield has many mountains (Roraima, Neblina, Paracaima, etc.) that have high levels of endemics and species richness, including many species recently described based mainly on specimens from the Venezuelan and/or Guianan sides (e.g., Smith, 1990).

For northwestern Brazil, most of the species listed as new records were previously known from neighboring countries that share with Brazil similar lowland vegetation types in the Amazon Basin. For example, the pteridophyte flora of Brazil and Bolivia is similar, and both countries share several species of which some are here presented.

One new record is presented for southern Bahia State, with a clear disjunction between the montane environments in the Andes and/or Venezuelan-Guayanan Shield, and the forests of northeastern Brazil.



At the moment there is no floristic project for the Brazilian pteridophyte flora as a whole, and the species here considered belong to groups that we have recently studied and for which the determinations could be corroborated. Other more poorly studied groups are likely sources of new records for Brazil and Bolivia, but taxonomic revisions are still needed to clarify problems of species circumscription.

For Bolivia, the most recent paper on the pteridophyte diversity was published by Smith *et al.* (1999). They presented 145 species and one variety as new records for the country. The authors commented about the difficulty of estimating the diversity of the group in a floristically poorly known area. An ongoing flora project of Bolivian pteridophytes by M. Kessler & A. R. Smith (pers. comm.) will shortly provide a full treatment of the ca. 1,150 Bolivian pteridophyte species.

As pointed out by Smith *et al.* (1999) among the pteridophytes of Bolivia there are a lot of new records and undescribed species already represented in herbarium collections, which have partly been described by Lellinger & Prado (2001), Prado & Smith (2002), Smith & Prado (2004), Prado (2005a), Kessler & Smith (2005), Kessler *et al.* (2005a), Kessler *et al.* (2005b), Kessler & Mickel (2006), Kessler & Smith (2006), Kessler *et al.* (2006), and Prado (2006).

Here we present some of them as new records for Bolivia corroborating the expectation of Smith *et al.* (1999). Until recently some of these species were considered as endemic to Brazil (*Adiantum ornithopodum*, *A. senae*, and *A. sinuosum*) or Peru (*A. poeppigianum* and *A. scalare*).

Our main goal in this paper is to add taxa not listed before in the older and more recent literature to the pteridophytes of Bolivia and Brazil, as well as to call attention that the taxa cited here have a wider range of distribution than previously known.

***Adiantum anceps*** Maxon & C. V. Morton, Amer. Fern J. 24: 15–17. 1934.

The concavely acuminate ultimate segments separate this species from *Adiantum peruvianum*, the most similar species.

DISTRIBUTION AND ECOLOGY.—Previously known from Colombia, Ecuador, and Peru (Tryon & Stolze, 1989); reported here from Bolivia. It grows in forests along meandering streams in valleys.

SPECIMEN STUDIED.—BOLIVIA. **La Paz:** Prov. Sud Yungas, Río Inicua, 15°29'S, 67°13'W, 550 m, 17 Nov 1996, *D. Lara 95* (LPB).

***Adiantum decoratum*** Maxon & Weath., Amer. J. Bot. 19: 165. 1932.

This species can be easily recognized by its atropurpureous petiole and rachises, with dense, spreading, dark brown scales. The scales are entire or denticulate and each has a filiform apex.

DISTRIBUTION AND ECOLOGY.—Previously known from Mexico, Mesoamerica, northern Colombia, French Guiana, and Peru (Lellinger, 1989; Jermy, 1995; Mickel & Smith, 2004; Smith *et al.*, 2005; Smith & Boudrie, pers. comm.). Until



recently, this species was known in South America only from Chocó in Colombia (Mickel & Smith, 2004), but it has recently been reported for Peru (Smith *et al.*, 2005). In Brazil it grows in forests along meandering streams in valleys in steep, hilly terrain.

**SPECIMEN STUDIED.**—BRAZIL. **Acre:** Mun. Santa Rosa do Purus, Rio Chandless tributary of Rio Purus, right bank, Canamari, 9°22'59"S, 69°56'38"W, ca. 250 m, 28 Mar 1999, *D. C. Daly et al. 10164* (NY).

**Adiantum diogoanum** Glaz. ex Baker, *J. Bot.* 20: 310. 1882.

This species can be recognized by the rachises with large scales (3–4 cells wide) with ciliate margins and pectinate bases, and pubescent indusia with reddish brown hairs.

**DISTRIBUTION AND ECOLOGY.**—Colombia, Ecuador, Peru (Smith *et al.*, 2005), and Brazil (Prado, 2000); now recorded from Bolivia, where it was found in forests at 100–1200 m.

**SPECIMENS STUDIED.**—BOLIVIA. **Beni:** Prov. Yacuma, Campamento Campo Monos, bajando por el Río Curiraba, 14°38'S, 66°4'W, 17 Nov 1996, *A. Acebey 20* (LPB). **La Paz:** Prov. Sud Yungas, Chulumani 107 km hacia NNE, pasando Asunta Alto Charia sobre el río San Jos' afluente del Río Boopi, 15°58'S, 67°10'W, 900 m, 6 Aug 1983, *S. G. Beck 8511* (LPB); Prov. Nor Yungas, puente sobre el Río Beni, al oeste del mismo, 9 km hacia, Litoral, 15°32'S, 67°23'W, 550 m, 30 Mar 1986, *S. G. Beck 13368* (LPB); Prov. Ballivián, Pilón Lajas, Rurrenabaque, Serranía Suse, 14°25'S, 67°31'W, 228 m, 17 Nov 1999, *M. De Boer 1290* (LPB). **Santa Cruz:** Prov. Ñuflo de Chávez, San Ramón Puquio Sur- Ladera NO, 16°38'S, 62°27'W, 505 m, 22 Feb 1991, *R. Quevedo 340* (MO). Prov. Valle Grande, Vallegrande, 18 km a Boyuibe, 18°59'S, 63°44'W, 550 m, 9 Jul 1995, *M. Kessler 5265* (LPB).

**Adiantum dolosum** Kunze, *Linnaea* 21: 219. 1848.

The entire pinnae with approximately equilateral bases, the single, long sori on each side of the pinna, and the partially areolate veins are good features to distinguish this species.

**DISTRIBUTION AND ECOLOGY.**—Venezuela, Guyana, Suriname, French Guiana, and Brazil (Smith & Lellinger, 1995; Cremers, 1997); reported here from Bolivia, where it was found in Amazonian forests at 130 m.

**SPECIMEN STUDIED.**—BOLIVIA. **Pando:** Prov. Manuripi, comunidad Santa Rosa, río arriba por el Madre de Dios desde Riberalta, entrando por Valparaiso, 10°52'S, 66°10'W, 130 m, 8 Nov 2003, *I. Jiménez 2023* (LPB).

**Adiantum incertum** Lindm., *Ark. für Bot.* 1: 204, tab. 9, fig. 4. 1903.

This species belongs to the group of *Adiantum latifolium* Lam. and can be easily recognized by long-creeping rhizomes, 2-pinnate laminae, and pinnules



abaxially bearing hairlike scales with a few basal processes. *Adiantum humile* Kunze and *A. terminatum* Kunze ex Miq. are similar to *A. incertum*, but they differ by the nodose, short-creeping rhizome, and the septate hairs on the abaxial lamina surface.

DISTRIBUTION AND ECOLOGY.—Paraguay and Brazil (Lindman, 1903; Prado & Lellinger, 2002). Here recorded from Bolivia, where it grows inside forest along river margins, 150–250 m.

SPECIMENS STUDIED.—BOLIVIA. **Santa Cruz:** Prov. Velasco, Parque Nacional Noel Kempff Mercado, Arroyo Las Lontras; bosque de sartenejal, Parcela permanente de estudio, al S del Arroyo, 14°24'S, 61°8'W, 150 m, 26 Jul 1996, *L. Arroyo 1375b* (NY). **Beni:** Prov. Ballivián, Espíritu en la zona de influencia del Río Yacuma, Isla de Espíritu, 14°9'S, 64°23'W, 200 m, 13 Apr 1981, *S. G. Beck 5368* (LPB); Prov. Ballivián, km 35 on Yucumo-Rurrenabaque road Agric.-Tech High School at Río Colorado, 14°55'S, 67°5'W, 235 m, 13 Jul 1990, *A. Fay & L. Fay 2682* (MO); Prov. Yacuma, Estación Biológica del Beni, bosque de altura inundado a 400 m al N del Río Curiraba, 14°37'S, 66°22'W, 250 m, 24 Dec 1987, *M. Moraes 954* (LPB). **Cochabamba:** Carrasco, Puerto Villarroel, propiedad de Bernardino Rodríguez, al lado de la carretera Ivirgarzama-Puerto Villarroel, Transecto 38, 16°50'S, 64°48'W, 190 m, 6 Oct 2000, *R. C. Paz 788* (LPB).

***Adiantum ornithopodum*** C. Presl ex Kuhn, *Linnaea* 36: 74–75. 1869.

The color of the stalks passing into the segment bases, quadrangulate to trapeziform median segments with rounded apices, glabrous rachises, as well as glabrous segments on both surfaces distinguish this species.

DISTRIBUTION AND ECOLOGY.—Brazil (Prado, 2004); reported here for the first time from Bolivia, where it grows in drough-deciduous Chiquitano forest.

SPECIMENS STUDIED.—BOLIVIA. **Santa Cruz:** Prov. Velasco, San Juanito ca. 30 km al N de San Ignacio, 16°14'S, 60°58'W, 400 m, 05 Apr 1986, *S. G. Beck 12397* (LPB); Prov. Velasco, San Ignacio 4 km hacia el S, 16°22'S, 60°55'W, 400 m, 25 Jun 1986, *R. Seidel 689* (LPB).

***Adiantum patens*** Willd., *Sp. pl. ed. 4, 5: 439*. 1810.

The blade architecture is a distinctive character of this species. The laminae are ovate to nearly circular in outline, with 2 recurved rachises, each rachis bearing pinnules on only the basisopic side. Superficially resembles *Adiantum pedatum* L., a common species in North America.

DISTRIBUTION AND ECOLOGY.—Mexico, Mesoamerica, Colombia, Venezuela, Ecuador, Peru, and Bolivia (Lellinger, 1989; Tryon & Stolze, 1989; Jermy, 1995; Mickel & Smith, 2004); here reported from Brazil, where it was found growing at 860 m, in dry forests.



SPECIMEN STUDIED.—BRAZIL. **Ceará:** Planalto da Ibiapaba, PNU, Jun 1978, A. Fernandes & F. J. A. Matos s.n. (EAC 4015).

**Adiantum poeppigianum** (Kuhn) Hieron., Hedwigia 48: 231. 1909. *Adiantum lucidum* (Cav.) Sw. var. *poeppigianum* Kuhn, Jahrb. Königl. Bot. Gart. Berlin 1: 340. 1881.

This species can be distinguished by the dark color of the pinna stalks continuing into the bases of the pinnae and the distinct midveins of the pinnae.

DISTRIBUTION AND ECOLOGY.—Peru (Tryon & Stolze, 1989); reported here for the first time from Bolivia and Brazil; 100–500 m.

SPECIMENS STUDIED.—BOLIVIA. **Beni:** Prov. Ballivián, Río Colorado, Colegio Técnico Agropecuario de Río Colorado, 15°00'S, 67°10'W, 24 Jun 1989, A. Fay & L. Fay 2127 (LPB). **La Paz:** Prov. Sud Yungas, Alto Beni, cerca de Sapecho, planicie aluvial del río, 15°30'S, 67°20', 12 Jun 1994, R. Seidel 7642 (LPB). BRAZIL. **Acre:** Mun. Sena Madureira, basin of Rio Purus, Rio Laco, right bank, Nova Olinda, between Igarapé Santo Antônio and Igarapé Boa Esperança, 10°07'S, 69°13'W, 29 Oct 1993, D. C. Daly et al. 7972 (NY); Mun. Assis Brasil, basin of Rio Purus, Rio Acre, left bank, Seringal São Francisco, Colocação Derretida, 10°56'31"S, 69°45'33"W, 26 Mar 1998, D. C. Daly et al. 9810 (HPZ, NY); Mun. Santa Rosa do Purus, Rio Purus, left bank, Seringal Santa Helena, 9°7'49"S, 70°10'37", 24 Mar 1999, D. C. Daly et al. 10034 (NY); Mun. Marechal Thaumaturgo, basin of Rio Juruá, Rio Arara (tributary of Rio Juruá), 25 m, 9°4'13"S, 72°46'40"W, 6 May 2001, D. C. Daly et al. 10950 (NY).

**Adiantum ruizianum** Klotzsch, Linnaea 18: 551. 1845.

*Adiantum ruizianum* is distinct by its long-creeping rhizomes, long-stalked pinnae, suborbicular, glabrous segments that are not articulate, and the color of the stalks passing into the bases of the pinnae. Sterile pinna margins have veins ending in sinuses.

DISTRIBUTION AND ECOLOGY.—Peru and Bolivia (Tryon & Stolze, 1989; Smith et al., 1999); reported here for the first time from Brazil, near the Bolivian border.

SPECIMEN STUDIED.—BRAZIL. **Mato Grosso:** Mun. Cáceres, Serra do Pitacanuado, 16°5'S, 57°40'W, 2 Nov 1987, A. Salino 182 (GH, HB, UEC).

**Adiantum scalare** R. M. Tryon, Amer. Fern J. 47: 141–142, tab. 15. 1957.

This very distinct species has narrowly deltate pinnae that are pubescent abaxially (long brown hairs) with a small auricle on the acroscopic side. The indusia are linear and continuous on each side of the pinna.

DISTRIBUTION AND ECOLOGY.—Previously known only from Peru (Tryon & Stolze, 1989) and Ecuador (Jørgensen & León-Yáñez, 1999); here for the first time



reported from Bolivia and Brazil, growing on Terra Firme with palms and bamboo (*Guadua*).

SPECIMENS STUDIED.—BOLIVIA. **La Paz:** Prov. Iturralde, Cantón San José de Chupiamonas, Serranía de Eslabón, 14°15'S, 68°4'W, 19 Apr 1997, *S. G. Beck 24080* (LPB); F. Tamayo, Parque Nacional Madidi, Río Hondo, arroyo Negro, pica hacia la serranía de Toregua, Bosque amazónico Estacional húmedo, en planicie ondulada, 14°40'S, 67°49'W, 340 m, 25 Mar 2002, *Fuentes 4054* (SP). BRAZIL. **Acre:** Mun. Cruzeiro do Sul, Reserva Extrativista do Alto Juruá, 8°55'S, 72°31'W, 11 Mar 1992, *D. C. Daly et al. 7331* (NY); road Trauacá to Feijó, Km 17, 17 Sep 1968, *G. T. Prance et al. 7335* (GH, K, NY, US); Mun. Marechal Thaumaturgo, basin of Rio Juruá, Rio Tejo, right bank, 9°2'52"S, 72°16'24"W, 1 Dec 2000, *D. C. Daly et al. 10304* (NY).

**Adiantum senae** Baker, London J. Bot. 23: 217. 1885.

This species has a very small size (2.5–6 cm tall), flexuous rachises, and diminute, flabelate pinnules (2–3 mm long) each with only one sorus on the distal side.

DISTRIBUTION AND ECOLOGY.—Previously known only from Brazil; reported here for the first time from Bolivia. It grows on calcareous rocks in open places.

SPECIMEN STUDIED.—BOLIVIA. **Santa Cruz:** Prov. Velasco, campamento Las Torres, margen del Río Tienes, frontera con Matto Grosso, lado NE de la Serranía de Huanchaca, 24 km al S de Flor de Oro, 50 km al N del Río Verde, 13°39'S, 60°48'W, 400 m, 26 May 1991, *M. Peña-Chocarro 316* (LPB).

**Adiantum sinuosum** Gardner in Hooker, Ic. pl. 6: tab. 504. 1843.

This is a very distinct species in having laminae up to 3-pinnate proximally, yellowish rhizome scales, flabellate to roundish pinnules, and oblong to strongly lunate indusia.

DISTRIBUTION AND ECOLOGY.—Previously known only from Brazil (Prado, 2005b); reported here for the first time from Bolivia. It grows on open places, near the base of shrubs.

SPECIMENS STUDIED.—BOLIVIA. **Santa Cruz:** Prov. Velasco, Parque Nacional Noel Kempff Mercado, Campamento Los Fierros, 10 km E y 1 km S, vegetación cerrada, 14°33'S, 60°56'W, 150 m, 1 May 1994, *B. Mostacedo 1498* (MO); Prov. Velasco, Parque Nacional Noel Kempff Mercado, 13°58'S, 60°50'W, 500 m, 5 Jan 1997, *A. Soto 478* (MO).

**Bolbitis oligarchica** (Baker) Hennisman, Amer. Fern J. 65: 30. 1975.

*Acrostichum oligarchicum* Baker in Hooker & Baker, Syn. Fil. 418. 1868.

The proliferous buds in the axils (or on stalks) of the pinnae and the usually greatly reduced single pair of proximal pinnae readily distinguish this species.



DISTRIBUTION AND ECOLOGY.—Mesoamerica, Colombia, Ecuador, Peru, and Bolivia (Murillo-Pullido & Harker-Usech, 1990; Tryon & Stolze, 1991; Hennipman & Moran, 1995); reported here for the first time from Brazil. Inside wet forests on steep slopes.

SPECIMEN STUDIED.—BRAZIL. **Acre:** Mun. Mâncio Lima, Bacia do Alto Juruá, Rio Moa, Parque Nacional da Serra do Divisor, fundo do vale do Igarapé do Amor, 7°26'55"S, 73°39'41"W, 16 Jun 1996, *M. Silveira et al.* 1361 (NY).

**Lellingeria phlegmaria** (J. Sm.) A. R. Sm. & R. C. Moran, Amer. Fern. J. 81: 86. 1991. *Polypodium phlegmaria* J. Sm., London J. Bot. 1: 194. 1842.

This species can be recognized by its linear-deltate, dark, rigid, glabrous scales, linear laminae with short segments (up to 1 cm long), and superficial or slightly sunken sori. It resembles *Lellingeria depressa* (C. Chr.) A. R. Sm. & R. C. Moran, a species restricted to the Atlantic Forest in Brazil, which has broader laminae and deeply sunken sori.

DISTRIBUTION AND ECOLOGY.—Antilles, Honduras, Costa Rica, Colombia, Venezuela, Ecuador, Peru, and Bolivia (Moran *et al.*, 1995; Bishop & Smith, 1995; Kessler & Smith, pers. comm.), and now is known from Brazil.

SPECIMEN STUDIED.—BRAZIL. **Roraima:** Dec 1909, *E. Ule* 8523 (MG).

**Pleopeltis repanda** A. R. Sm., Ann. Missouri Bot. Gard. 77: 259. 1990.

The entire laminae with undulate or repand margins, and the discrete sori lacking paraphyses are good characters to distinguish this species from its closest relatives in the genus, such as *Pleopeltis macrocarpa* (Bory ex Willd.) Kaulf. (Smith, 1990). It is also similar to *Neurodium lanceolatum* (L.) Fée, a monotypic genus that differs by having the sori confluent in marginal coenosori.

DISTRIBUTION AND ECOLOGY.—This species occurs in eastern Venezuela and Guyana (Smith, 1990; A. R. Smith, pers. comm.), and is here reported from northern Brazil. In addition to the collection cited below, there is a collection from "Ceará, Guaramiranga", Nov 1897, *J. Hueber* g120 (MG), which we believe was mislabeled. Collector, locality, and collection number were each annotated with three distinct handwritings on the label, casting doubt on the label information. Occurrence of *P. repanda* in northeastern Brazil would considerably amplify the distribution of this species.

SPECIMEN STUDIED.—BRAZIL. **Roraima:** Proximidades da divisa com a Venezuela, Km 11-2 do marco BV-9, Cordilheira Pacaraima, 3440 ft, 24 Nov 1979, *N. A. Rosa & O. C. Nascimento* 3538 (MG).

**Tectaria draconoptera** (D. C. Eaton) Copel., Philipp. J. Sci. 2C: 410. 1907. *Aspidium draconopterum* D. C. Eaton, Mem. Amer. Acad. Arts, n.s., 8: 211. 1860.



This species can be recognized by its erect rhizomes, proximal pinna pair connected to the pair above by the alate rachis, and small, exindusiate sori in four or more irregular rows between main lateral veins.

DISTRIBUTION AND ECOLOGY.—Mesoamerica, Colombia, Ecuador, Peru, and Bolivia (Murillo-Pullido & Harker-Usech, 1990; Tryon & Stolze, 1991; Moran, 1995; Navarrete, 2001; M. Kessler & A. R. Smith, pers. comm.), and now reported for Brazil. It grows in primary forests on Terra Firme in Acre State, steep hills dissected by many small streams.

SPECIMENS STUDIED.—BRAZIL. **Acre:** Mun. Brasiléia, basin of Rio Purus, upper Rio Acre, Colônia Santo Antônio, 10°56'29"S, 69°15'41"W, 29 Mar 1998, *D. C. Daly et al. 9882* (HPZ, NY); Mun. Bom Futuro, Associação Chico Mendes, Km 52 of Brasiléia-Assis Brasil road, 18 km on Ramal (side road) "Tocandeira", 10°44'41"S, 69°2'57"W, 18 May 2003, *D. C. Daly et al. 11891* (NY).

**Terpsichore asplenifolia** (L.) A. R. Sm., *Novon* 3: 479. 1993. *Polypodium asplenifolium* L., *Sp. pl.* 2: 1084. 1753.

This species can be recognized in having ciliate scales on the stems, up to 2 mm long, ciliate sporangia, and unforked veins. *Terpsichore chryseri* (Copel.) A. R. Sm. is similar, differing by its longer scales on the stem (up to 6 mm), and forked veins.

DISTRIBUTION AND ECOLOGY.—Mexico, Central America, Antilles, Colombia, Venezuela, Trinidad, Ecuador, Peru, and Bolivia (Moran *et al.*, 1995; Bishop & Smith, 1995; M. Kessler & A. R. Smith, pers. comm.), and now reported from Brazil.

SPECIMEN STUDIED.—BRAZIL. **Bahia:** Mun. Camacan, RPPN Serra Bonita, 835 m, 15°23'30"S, 39°33'55"W, 3 Feb 2005, *F. B. Matos et al. 308* (CEPEC).

**Thelypteris membranacea** (Mett.) R. M. Tryon, *Rhodora* 69: 7. 1967. *Phegopteris membranacea* Mett., *Fil. Lechl.* 2: 22. 1859.

Within *Thelypteris* subgenus *Meniscium*, this species can be distinguished by the relatively thin laminae, appressed, thin costal hairs, buds in the axils of proximal pinnae, and straight secondary veins that unite to create very narrow areoles.

DISTRIBUTION AND ECOLOGY.—Colombia, Peru (Smith, 1992), and Bolivia (M. Kessler & A. R. Smith, pers. comm.), reported here for the first time from Brazil. In wet forests on steep slopes.

SPECIMEN STUDIED.—BRAZIL. **Acre:** Mun. Mâncio Lima, Bacia do Alto Juruá, Rio Moa, Parque Nacional da Serra do Divisor, Morro Queimado, ao longo do Igarapé do Amor, 7°28'0"S, 73°37'27"W, 6 May 1996, *M. Silveira et al. 1249* (NY).

**Thelypteris opulenta** (Kaulf.) Fosberg, *Smithsonian Contr. Bot.* 8: 3. 1972. *Aspidium opulentum* Kaulf., *Enum. Fil.*: 238. 1824.



This species belongs to the subgenus *Cyclosorus* and can be recognized by sessile or short-stalked, deeply pinnatifid pinnae, not reduced proximal pinnae, prolonged laminar apices, supramedial, round sori confined to the pinna lobes, and indusia with glands at margins and sometimes also with hairs.

DISTRIBUTION AND ECOLOGY.—Mesoamerica, Antilles, Colombia, Venezuela, Guyana, Suriname, Ecuador, Peru, and Bolivia (A. R. Smith, pers. comm.). It also occurs in Africa and Asia (Smith, 1992). According to Smith (1992), it is an introduced and common species in Peru. Here it is reported from Brazil as widely distributed in Acre State. In open forests with palms and scattered bamboo (*Guada*).

SPECIMENS STUDIED.—BRAZIL. **Acre:** Mun. Porto Acre, Reserva Floretal de Humaitá, Beira do Rio Acre, 6°53'S, 66°32'W, 22 Mar 1995, *C. Figueiredo & I. Riveiro* 751 (NY); Mun. Manoel Urbano, Rio Chandless (tributary of Rio Purus), right bank, "Canamari", 9°23'0.6"S, 69°56'41"W, 19 Mar 2002, *D. C. Daly et al.* 11458 (NY); Mun. Manoel Urbano, Rio Chandless (tributary of Rio Purus), right bank, "Ananaí", 9°28'23"S, 70°01'03"W, 20 Mar 2002, *D. C. Daly et al.* 11498 (NY); Cruzeiro do Sul, Projeto RADAM-Sub-base de Cruzeiro do Sul - Ponto 2-SB-18-ZB, 16 Feb 1968, *L. R. Marinho* 204 (NY); vicinity of Aldeota, Rio Juruá-Mirim, 24 May 1971, *P. J. M. Maas et al.* P13304 (NY); vicinity of Serra da Moa, 24 Apr 1971, *G. T. Prance et al.* 12428 (NY); basin of Rio Juruá, Rio Juruá-Mirim, left bank, "Vista Alegre", 8°8'2"S, 72°49'45"W, 15 May 2003, *D. C. Daly et al.* 11858 (NY); Comunidade Assis Brasil, Ramal do Pentecoste, km 10, Ramal sem nome à direita, divisa entre AC-AM, Campinarana e Floresta de Baixio, 7°31'17"S, 72°51'15"W, c. 0–200 m, 23 Oct 2001, *J. Prado et al.* 1333 (HPZ, SP); Mun. Mâncio Lima, Volta da Aurora, mata na várzea do Rio Moa, 7°33'26"S, 72°55'30"W, c. 0–200 m alt., 14 Oct 2001, *J. Prado et al.* 1144 (HPZ, SP); Mun. Xapuri, margem direita do Rio Xapuri, mata de varzea, 19 May 2001, *L. G. Lohmann & E. C. de Oliveira* 598 (NY); Mun. Marechal Thaumaturgo, basin of Rio Juruá, Rio Tejo, right bank, 9°2'52"S, 72°15'59"W, 3 Dec 2000, *D. C. Daly et al.* 10366 (NY); Mun. Santa Rosa, Rio Chandless, tributary of Rio Purus, right bank, "Canamari", 9°22'59"S, 69°56'38"W, 28 Mar 1999, *D. C. Daly et al.* 10158 (NY); Rio Purus, left bank, Colocação Santa Helena, trail to Rio Envira, 9°7'48"S, 70°10'37"W, 26 Oct 2001, *D. C. Daly et al.* 11098 (NY); Idem, Rio Chambuiacu, right-bank tributary of Rio Purus defining border with Peru, 9°34'13"S, 70°35'23", 14 Mar 2002, *D. C. Daly et al.* 11327 (NY); Mun. Sena Madureira, Vic. of km 7, road Sena Madureira to Rio Branco, 29 Sep 1968, *G. T. Prance et al.* 7662 (NY); Rio Macaua, Seringal Riozinho, Colocação Provenir, 9°43'S, 69°7'W, 31 Mar 1994, *L. de Lima et al.* 553 (HPZ, NY).

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